

UNITED STATES MARINE CORPS  
Logistics Operations School  
Marine Corps Combat Service Support Schools  
Training Command  
PSC Box 20041  
Camp Lejeune, North Carolina 28542-0041

F202

**STUDENT OUTLINE**

**PMCS AND CM**

**LEARNING OBJECTIVES**

1. Terminal Learning Objectives:

a. Given the billet of maintenance chief, equipment records, Equipment Repair Order (ERO), Daily Process Report (DPR), and the references, identify equipment PMCS and CM requirements, to ensure equipment records reflect current status of equipment during its process through the various phases of maintenance.

b. Given the billet of maintenance management chief and a requirement to monitor equipment maintenance, identify equipment maintenance production requirements, to ensure equipment maintenance is performed in accordance with the references.

2. Enabling Learning Objectives:

a. Given the billet of maintenance management chief, equipment records, ERO, DPR, and the references, identify:

- (1) The characteristics of PMCS.
- (2) The characteristics of CM.
- (3) The types of PMCS per equipment commodity.
- (4) Deferred PMCS options.
- (5) The characteristics associated with deferred maintenance.
- (6) The characteristics of maximum maintenance cycle time.

b. Given the billet of maintenance management chief and a requirement to monitor equipment maintenance, identify the:

- (1) Four phases of maintenance.
- (2) The characteristics of the different maintenance phases.

## **OUTLINE**

### **1. PROCESSING OF EQUIPMENT THROUGH ITS MAINTENANCE PHASES**

a. Maintenance production is that area of equipment maintenance which involves the physical performance of various maintenance functions. These functions are preventive maintenance checks and services (PMCS), corrective maintenance (CM), modification, calibration, conversion, modernization, overhaul, and rebuild. During the performance of maintenance production, equipment will be processed through its maintenance cycle in various phases.

b. Acceptance Phase. The acceptance phase is the initial step of the maintenance process. The acceptance phase consists of equipment inspection, scheduling, and shop assignment.

(1) The purpose of the acceptance inspection is to verify that the equipment is complete and prepared for the required maintenance service and is conducted upon initial receipt by the maintenance activity. The procedures to be followed in the acceptance inspection are as follows:

(a) Determine if the equipment is complete and that the appropriate operator maintenance, including cleaning, has been performed. Remove and store collateral equipment and annotate the Equipment Repair Order (ERO) unless collateral equipment is required during the maintenance action. Equipment that is incomplete or not properly prepared by the unit or activity requesting maintenance should be reported to the using unit commander. Equipment is considered incomplete when it does not contain the required equipment maintenance records.

(b) Verify the ERO has been properly prepared per TM 4700-15/1\_.

(c) Accept the equipment for the required service. Acceptance is noted on the ERO by the person authorized to accept the equipment into the maintenance section.

(d) Assign a production priority for use within the maintenance section. This priority will be based on the ERO priority and other appropriate criteria established by the maintenance officer or chief.

(2) Acceptance Scheduling. The purpose of acceptance scheduling is to have equipment requiring maintenance arrive at the maintenance facility at or after the time that the required maintenance resources are available. This procedure allows the equipment owner maximum operational use of this equipment while avoiding needlessly large concentrations of equipment awaiting maintenance at the maintenance facility. Acceptance scheduling normally applies to all PMCS, modifications, calibrations, and routine repairs. To be effective, close supervision between the equipment owner and the maintenance section is required. Procedures for acceptance scheduling are as follows:

(a) Preparation of a deferred or unit recall ERO by the owning unit.

(b) Acceptance of an ERO by the maintenance section. Acceptance by the maintenance section includes establishment, when appropriate, of the date of delivery of the equipment for the required service.

(c) Tentative scheduling of the equipment to a specific maintenance shop within the maintenance section.

(d) Determining the parts required for the service and initiating the EROSL to ensure availability of parts at the time of the service.

(3) Shop Assignment. The assignment of equipment to a specific maintenance shop within the maintenance section occurs upon completion of the acceptance inspection and scheduling, when appropriate. In maintenance activities comprised of only one maintenance shop, this assignment occurs at the time of acceptance of the equipment during the acceptance inspection. The procedures to be followed in the shop assignments are as follows:

(a) Identify the type of shop to perform the required service.

(b) Review the workloads and available resources of individual shops within the maintenance section and determine which shop should be assigned the ERO.

(c) Assign the ERO to a specific maintenance shop. When assigning, always consider the priority assigned the ERO to ensure that the equipment readiness of supported units is not impaired.

(d) Assign the preexpended parts required for the service to the ERO to ensure availability at the time of induction.

c. Equipment Induction Phase

(1) Induction of the equipment is the physical commitment of an ERO and associated equipment requiring service to the assigned shop.

(2) Induction of the equipment into a specified shop must be by the priority established in the equipment acceptance phase. The equipment should be requested by the maintenance shop when the necessary maintenance resources are available to perform the required services.

d. Active Maintenance Phase. Production actions performed following induction of the ERO and its associated equipment into a maintenance shop constitute the active maintenance phase and the beginning of the repair process. This phase is performed in a sequence of logical steps designed to ensure that the required services are conducted in an efficient and effective manner. During this phase, continual emphasis is placed on quality control of the actions and tasks performed. The frequency of quality control inspections will depend on the skill and experience of the individual technicians or mechanics and the overall complexity of the actions. The steps to be followed in the conduct of active maintenance are described in the following:

(1) Inspection of the equipment Maintenance personnel assigned to perform the service will perform a detailed inspection of the equipment upon its induction into the shop. This inspection serves as a basis for the performance of the maintenance and includes:

(a) Locating, identifying, and inventorying the equipment and its components.

(b) Verifying all equipment records associated with the required service are prepared per TM 4700-15/1\_ and appropriate equipment publications.

(2) Preparation for the Performance of Maintenance Actions. This preparation includes the assembly of the appropriate technical manuals and other technical information, support equipment, and TMDE to perform the required service. Adequate preparation reduces the actual time required to perform the maintenance and also ensures that maintenance actions are not initiated for which required resources are not available.

(3) Performance of Maintenance Actions. Performance of maintenance actions will be per the appropriate technical manual. Appendix F of TM-4700-15/1\_ contains the maintenance process and the relationship of maintenance production to information flow.

(a) Preventive Maintenance Checks and Services

1. Obtaining Required Materials Maintenance personnel, before requisitioning the materials to perform the PMCS, will verify the required material by proper research procedures and the correct use of technical publications. Proper operating levels of consumable supplies used in the performance of PMCS should be maintained within each shop to ensure that their nonavailability does not interfere with maintenance operations. Consumable supplies required for PMCS must be requested on an ERO in sufficient time for the scheduled PMCS.

2. Performance of PMCS Performance of PMCS will be per the procedures established in the applicable technical publication. During PMCS, a check will be made to determine the status of required modifications. This check will involve the physical examination of the equipment, equipment records, the SL-1-2, and the TI-5600 series. Upon completion, update the ERO and the equipment records per TM 4700-15/1\_.

(b) CM

1. Isolation of the Cause of the Equipment Malfunction. During this step, maintenance personnel, using appropriate support equipment and TMDE and the proper step-by-step procedures described in the applicable technical manual, isolate the cause of the equipment malfunction. Once the cause is isolated and fault diagnosis confirmed, an estimate of the cost of the required maintenance is made to determine if the equipment is economically repairable. When the equipment is determined not to be economically repairable, active maintenance is terminated, and the equipment enters the close-out phase.

2. Obtaining Required Repair Parts and Secondary Repairables. Maintenance personnel, before requisitioning required repair parts and secondary repairables, will verify the material required by proper research procedures and the correct use of technical publications. Preexpended bin levels should be maintained within each shop to ensure the ready availability of preexpended bin items. Demands will be expeditiously submitted when parts requirements become known.

(c) Modification Control

1. Obtaining Required Materials. Maintenance personnel, before requisitioning the materials to perform modifications, will verify the required material by proper research procedures and the correct use of technical publications. Proper operating levels of expendable and consumable materials used in the performance of modifications should be attained and positioned within each shop to ensure that their nonavailability does not interfere with maintenance operations.

2. Application of the Modification. The MI directing the modification contains detailed procedures for its application. Maintenance personnel must ensure that these procedures are followed for correct application of the modification. Application of the modification must include both servicing and the use of prescribed test and measurement devices, when appropriate. Upon completion of the modification, update the ERO and appropriate equipment records per TM 4700-15/1\_.

(d) Calibration. Performance of calibration will be per the procedures established in MCO 4733.1 and only at approved calibration laboratories.

1. During the calibration process, a check will be made to determine the status of any required modifications. This check will involve the physical examination of the equipment, equipment records, SL-1-2, and TI-5600 series.

2. During the calibration process, test instruments requiring repair will be administered per the procedures for CM. Upon completion of the CM, the equipment must be calibrated to ensure that it meets standards.

3. During the calibration process, the calibration laboratory will conduct any intermediate PMCS required as stated in the item's appropriate publication.

4. Upon completion of the calibration process, the calibration laboratory will annotate the ERO with the date calibrated, the next calibration due date, and apply the calibration label to the item. The ERO and equipment records will be updated per TM 4700-15/1\_.

(4) Checking of completed maintenance actions on an ERO. Maintenance personnel will check their completed work by performing the necessary final adjustments on the repaired equipment. Adjustment procedures in the applicable technical publications must be followed in detail. Bringing the equipment performance to within tolerances specified in technical publications is a positive indication that the action has been successfully completed. Adjustments will be performed by, or under the supervision of, qualified personnel, using standards and gauges, and meeting or exceeding minimum acceptable standards contained in MCO 4733.1.

(5) Quality Control. Quality control requires a complete equipment check out to determine proper completion of maintenance actions and that equipment records are completed per TM 4700-15/1\_. Equipment check out will be conducted by qualified supervisory personnel under actual or simulated operating conditions. Equipment not performing satisfactorily will be rejected and recommendations made for further maintenance action. Acceptable performance results in the completion of the active maintenance phase and the movement of the equipment to the close-out phase.

(6) Clean up of the Maintenance Area. Time and resources must be allocated for cleanup of the maintenance area. Support and TMDE, including tools, must be cleaned, serviced, and inventoried allowing use for further maintenance actions. Technical publications must be returned to the library. Defective parts and other residue must be removed from the maintenance area using proper disposal procedures.

e. Maintenance Close-out Phase

(1) The close-out phase of the maintenance process commences when the equipment has been repaired and the serviceable item is to be returned to the owner, or when a decision has been made to evacuate or dispose of the equipment.

Maintenance personnel will ensure that the close-out process is accurate, complete, and coordinated.

(2) The close-out phase requires close coordination with owning unit personnel to make sure that they are notified as soon as the equipment is ready for pickup. Any special packaging, preservation, transportation, and shipping requirements must be taken care of at this time. The using unit must make every effort to pick up completed equipment promptly.

(3) In the close-out phase, maintenance personnel must ensure that the ERO and equipment records have been correctly completed per TM 4700-15/1\_.

## **2. MAINTENANCE FUNCTION-PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

a. Responsibility. The unit owning or using the equipment must establish a program and perform timely PMCS on equipment. PMCS will be scheduled per the commodity chapter of TM-4700-15/1\_, and when due the PMCS will be conducted per the applicable equipment technical publications. When no requirement to conduct PMCS is stated in the appropriate equipment technical manual or no equipment manual exist for equipment; for example, television sets and video monitors, no scheduled PMCS interval need be designated and no scheduled PMCS need be accomplished beyond first echelon. For those items with a stated scheduled PMCS requirement and no interval designated, the commanding officer will designate an interval not to exceed the designated interval listed in the appropriate commodity chapter of TM 4700-15/1\_. The unit using the equipment is responsible for PMCS of equipment and maintenance of equipment records for equipment on loan. PMCS process is contained in appendix F of MCO P4790.2\_.

### **b. General Information**

(1) PMCS includes the checking and servicing performed by personnel for maintaining equipment in satisfactory operating condition. This is achieved by accomplishing systematic inspection, detection, and correction of incipient failures either before they occur or before they can develop into major defects. A systematic PMCS program consisting of inspecting, cleaning, servicing, lubricating, and adjusting is the key to equipment readiness. It is normally a function of organizational maintenance and accomplished by the unit's operational and maintenance personnel. Effectively administered



PMCS will help prevent early breakdown or failure of equipment, and prevent costly, complex, and time-consuming repairs and allow the optimum use of maintenance resources.

(2) PMCS generally is cyclic in nature, one cycle being completed each year of the equipment's life. They are frequently referred to as scheduled maintenance and include PMCS performed by:

(a) The operator, user, or crew before, during, and after operations.

(b) The operator or crew on an hourly, daily, monthly, or special occurrence basis.

(c) Organizational maintenance personnel, assisted by the operator or crew, on a calendar, mileage, rounds-fired, or hours-of-operation basis.

(d) Operational and maintenance personnel in conjunction with the preceding mentioned services of a special nature.

(3) Completed PMCS will be recorded per TM 4700-15/1\_. The reporting of completed PMCS will be accomplished on the ERO for PMCS performed in organizational or support activity maintenance shops.

(4) The operator or crew will perform a scheduled PMCS when it is within their authorized echelon of maintenance (EOM). In the event that the equipment must be evacuated to a maintenance section for scheduled maintenance, the operator or crew will accompany the equipment, if feasible, and assist in the performance of the specified PMCS. There are certain items which, due to technological advances, use different criteria for scheduling PMCS. The appropriate technical publication provided for the individual equipment is the basic guide for performing PMCS requirements.

(5) Although, equipment modification is a separate, distinct process, the equipment modification status can best be determined as a part of the PMCS process. Because of the regular inspection of equipment during PMCS, combining PMCS with modification requirements can reduce both maintenance resource requirements and inconveniences to the unit's operation. Modification requirements identified can then be fulfilled

either concurrently with the PMCS or independently, as appropriate.

c. Daily PMCS. Daily PMCS is performed by the operator or crew each day that the equipment is operated. Equipment operated infrequently or intermittently does not require daily PM services. Care must be exercised to ensure that the maintenance of such equipment is not neglected. Daily PMCS is divided into before, during, and after operation services.

(1) Before operation PMCS is performed on equipment to determine if the equipment's condition has changed since last observed and to ensure that it is ready for operation. A wide range of events can occur between service checks; for example, physical damage from handling; corrosion of electrical connections; leakage of lubricants, coolants, operating fluids and gasses. This service should never be omitted despite adverse weather or tactical situations. A thoroughly trained operator or crew must efficiently perform this service as a matter of habit. When equipment is found to be unserviceable or requires CM, this fact must be reported promptly to the squad, section, platoon leader, or other designated individuals so that appropriate maintenance action can be taken.

(2) During operation PMCS is performed while the equipment is operating. The operator or crew must be alert for any unusual noises or odors, abnormal instrument readings, or any other irregularities indicating equipment malfunction. Every operation must be considered a test, and all unusual or unsatisfactory performance must be noted. When the equipment is not operating, all deficiencies noted during operation must be investigated and corrected or reported.

(3) After operation PMCS is performed after the equipment was operated. After operation PMCS is to prepare the equipment to operate again in a moment's notice. The operator or crew inspects the equipment thoroughly to detect any deficiencies that may have developed during the operation. Assemblies requiring inspection or service while still at operating temperature must be inspected as soon as possible after equipment operation has ceased. All defects and irregularities that occur during operation must either be corrected or reported to the echelon that can perform repairs when not within the echelon of the operator or crew.

d. Monthly PMCS. Monthly PMCS is designed to reinforce daily PMCS. It is generally the same checks performed during

the daily PMCS. Monthly PMCS provides management with a good indication of the quality of the daily maintenance performed by the operator or crew. Adequate supervision and inspection by qualified supervisory personnel will be provided to ensure the proper performance of monthly PMCS. Performance of monthly PMCS by the operator or crew, without adequate supervision can be detrimental to the effective operation of the unit's maintenance program and is to be avoided whenever possible.

e. Quarterly PMCS. Quarterly PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between PMCS's is 3 months for a quarterly PMCS. This period may be shortened when units of operation are accumulated beyond a figure set in the TM for the particular equipment. Quarterly PMCS will include all PMCS required for quarterly PMCS and lower. Quarterly PMCS provides for a comprehensive check of equipment to ensure trouble-free operation until the next scheduled PMCS. Economy of operation demands that, within sound practices of safety and reliability, maximum useful life be obtained from the material resources. Worn parts and materials will be replaced during PMCS only when it is determined, after due consideration of life expectancy and the nature of anticipated operations, that they cannot be expected to provide safe, reliable service until the next scheduled PMCS. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain firsthand information on irregularities or indications of equipment malfunction.

f. Semiannual PMCS. Semiannual PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between PMCS's is 6 months for a semiannual PMCS. This period may be shortened when units of operation are accumulated beyond a figure set in the TM for the particular equipment. Semiannual PMCS will include all PMCS required for semiannual PMCS and lower. Semiannual PMCS provides for a comprehensive check of equipment to ensure trouble-free operation until the next scheduled PMCS. Economy of operation demands that, within sound practices of safety and reliability, maximum useful life be obtained from the material resources. Worn parts and materials will be replaced during PMCS only when it is determined, after due consideration of life expectancy and the nature of anticipated operations, that they cannot be expected to provide safe, reliable service until the next scheduled PMCS. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain

firsthand information on irregularities or indications of equipment malfunction.

g. Annual PMCS. Annual PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between PMCS's is 12 months for a annual PMCS. This period may be shortened when units of operation are accumulated beyond a figure set in the TM for the particular equipment. Annual PMCS will include all PMCS required for annual PMCS and lower. Annual PMCS provides for a comprehensive check of equipment to ensure trouble-free operation until the next scheduled PMCS. Economy of operation demands that, within sound practices of safety and reliability, maximum useful life be obtained from the material resources. Worn parts and materials will be replaced during PMCS only when it is determined, after due consideration of life expectancy and the nature of anticipated operations, that they cannot be expected to provide safe, reliable service until the next scheduled PMCS. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain firsthand information on irregularities or indications of equipment malfunction.

h. Biennial PMCS. Biennial PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between PMCS's is 24 months for a biennial PMCS. This period may be shortened when units of operation are accumulated beyond a figure set in the TM for the particular equipment. Biennial PMCS will include all PMCS required for biennial PMCS and lower. Biennial PMCS provides for a comprehensive check of equipment to ensure trouble-free operation until the next scheduled PMCS. Economy of operation demands that, within sound practices of safety and reliability, maximum useful life be obtained from the material resources. Worn parts and materials will be replaced during PMCS only when it is determined, after due consideration of life expectancy and the nature of anticipated operations, that they cannot be expected to provide safe, reliable service until the next scheduled PMCS. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain firsthand information on irregularities or indications of equipment malfunction.

i. Equipment procured with a manufacturer's warranty will have PMCS scheduled and performed as indicated in applicable TM's until expiration of the warranty period. Equipment procured under a warranty is identified by applicable material fielding plans. Equipment not procured with a manufacturer's

warranty or when the warranty has expired will have the PMCS performed per the equipment's applicable technical manuals, and have its second and higher EOM PMCS scheduled per the commodity chapter of TM 4700-15/1\_.

j. TMDE. Operator PMCS combined with an operational check of the equipment per equipment TM's shall constitute organizational PMCS's for all categories of TMDE and requires no scheduling. The calibration laboratory and units authorized intermediate maintenance on test equipment must conduct intermediate PMCS during calibration. Intermediate PMCS does not require scheduling.

k. Deferred PMCS. PMCS may be deferred or intervals extended for equipment that is placed in the administrative storage program or equipment that is placed on administrative deadline. The criteria and PMCS requirements for equipment placed in the administrative storage program or administrative deadline are as follows:

(1) MSC Commanders may authorize administrative storage programs. When administrative storage programs are authorized, the equipment must:

(a) not be stored less than 12 months or more than 30 months.

(b) be in condition code A.

(c) be visually inspected quarterly.

(d) be exercised every six months.

(e) have a semiannual PMCS before induction.

(f) have any due PMCS conducted and a new PM scheduled upon removal.

(g) be in a level B preservation per MIL-V-62038.

(2) Commanding Officers may authorize administrative deadline. When administrative deadline programs are authorized, the equipment may have batteries and pilferable items removed and stored and must:

(a) not be stored less than 6 months or more than 12 months.

(b) be in a mission capable status.

(c) be visually inspected monthly.

(d) have a daily or equivalent PMCS performed in conjunction with quarterly exercise.

(e) have a semiannual or annual PMCS performed within 30 days before induction.

(f) have any due PMCS conducted and a new PMCS scheduled upon removal.

(3) Changes in PMCS Intervals. When the unit is operating under adverse climatic or terrain conditions for a period of time, commanders are authorized to reduce the intervals between the PMCS when conditions indicate the need.

(a) Special PMCS

1. An operating force unit or Marine Corps Reserve unit alerted for combat or training operation will perform a limited technical inspection (LTI) on all equipment before deployment. This LTI is an inspection performed by unit maintenance personnel to ensure that the equipment is complete, safe to operate, and capable of performing its designated primary combat function.

2. Upon receipt of all equipment, an appropriate acceptance LTI and such service required by the equipment TM will be performed. This LTI will include the correction of defects and the inspection of the equipment to determine if required modifications have been applied. Upon completion of this LTI and PMCS, update ERO and equipment records per TM 4700-15/1\_.

3. Special PMCS procedures are necessary when equipment has been exposed to salt or fresh water, or has been operated in loose sand or mud. Equipment will be checked for all probable areas for contamination, washed thoroughly with fresh water, and appropriate services will be performed per the applicable TM. In most instances, this special PMCS will essentially be a semiannual, annual, or biennial service. Upon completion of this special PMCS, update the ERO and the equipment records per TM 4700-15/1\_. In such cases, the commander may authorize the modification of the PMCS schedule to reflect the PMCS's performed and reschedule existing PMCS's.

1. Relationship of PMCS to CM. The objective of PMCS is to reduce CM. The close relationship of these two forms of maintenance becomes evident in several areas.

(1) Facilities. Common facilities are used for both PMCS and CM. PMCS requires close scheduling of facilities so that PMCS's may be performed allowing timely completion of CM.

(2) Common servicing. Sometimes a scheduled PMCS is required during CM; for example, an engine repair could require oil and filter change. When this occurs, the decision must be made whether to perform the full PMCS or to appropriately modify the PMCS. This decision must be made on a case-by-case basis, dependent upon the proximity of the next scheduled PMCS. When the PMCS is performed by the maintenance section, the ERO and equipment records will reflect the PMCS performance per TM 4700-15/1\_.

(3) Defects discovered during PMCS. PMCS frequently detect broken or worn parts before major damage occurs. When a defect is discovered during PMCS, a supervisor must be notified immediately. When this occurs, the decision must be made whether to perform the necessary CM independently or in conjunction with the PMCS. This decision is based on the urgency of need for the repair and the relationship of the PMCS being performed to the CM considerations. Second echelon or higher PMCS will be completed as far as practical, and the PMCS ERO will be closed. All remaining CM will be accomplished on a separate CM ERO.

(4) Evacuation for CM. All PMCS's that are due will be performed before equipment is evacuated for CM. An exception to this policy would be the case where the PMCS would have to be repeated during the CM; for example, not changing oil when the engine will be replaced. Equipment waiting or undergoing CM must still receive PMCS. For equipment evacuated to an intermediate maintenance activity, PMCS must be coordinated between the owner and the intermediate maintenance activity. The MSC SOP must reflect appropriate pertinent instructions. Time, distance between the organizations, available personnel, and quantity and nature of the equipment involved are factors to be considered in determining if the owner or the intermediate maintenance activity will perform PMCS's. Upon completion of the PMCS's, update the ERO and the equipment records per TM 4700-15/1\_.

### **3. MAINTENANCE FUNCTION-CORRECTIVE MAINTENANCE**

a. Responsibility. The owning unit is responsible for the timely performance of all CM actions within its authorized EOM. The designated intermediate maintenance activity is responsible for the timely performance of all CM actions exceeding the owning unit's authorized EOM.

b. General Information. CM consist of all maintenance actions performed, as a result of a failure, to restore equipment to a specific condition. The task comprising CM vary but when performed, CM will normally occur in the same sequence. The composite of these tasks is referred to as the CM process and, for any specified maintenance action, consists of those tasks to restore the equipment to the specified condition. The CM process when the equipment is reported as requiring CM. It terminates when the equipment is either restored to a serviceable condition, or declared not repairable, or as otherwise determined by competent authority.

c. Use of Established CM Procedures. CM actions will be performed per the procedures established in appropriate technical publications. Deviations from these procedures must be minimized and consistent with the effective performance of the specific maintenance action. Recommendations for the improvement of established CM procedures will be forwarded to the CMC (LP). CM process is contained in appendix F of MCO P4790-2\_.

### **4. MAINTENANCE CYCLE TIME**

a. Definition. Maintenance cycle time is the period of time equipment is inoperative and requires repair.

b. Maximum Maintenance Cycle Time

(1) This section is concerned with the maximum maintenance cycle time as it relates to intermediate maintenance. The maintenance cycle time commences on the date an item is received in the intermediate maintenance activity (IMA) (date received in shop (DRIS)). For those items evacuated for lack of supply support (not mission capable supply (NMCS)) the IMA will use the second echelon DRIS for determining the maximum cycle time. The following maximum cycle times are published for equipment inducted in the intermediate maintenance activity:



(a) End Items

1. One hundred and eighty days for West-/Mid-Pac units.

2. One hundred and twenty days for continental United States (CONUS) units.

(b) Secondary Repairables (Codes O, F, H, D, and L)

1. Ninety days for West-/Mid-Pac units.

2. Sixty days for CONUS units.

(2) Maximum maintenance effort is required to repair equipment before reaching the maximum maintenance cycle time. The following are some actions the intermediate maintenance shop must take to complete repairs before the maximum maintenance time:

(a) Detailed inspection of inducted equipment and requisition of known faulty components (secondary repairables/piece parts) will be accomplished within 5 working days from the DRIS.

(b) All supply sources will be used to obtain the required components as authorized by UM 4400-15, UM 4400-124, as parts from other sources including commercial procurement, fabrication, salvage, ISA, and contract maintenance.

(3) Supply followup actions will be conducted per UM 4400-15 and UM 4400-124.

c. Expiration of Maximum Maintenance Cycle Time. When the maximum maintenance cycle time expires or documentation shows that repairs cannot be completed within the maximum maintenance cycle time, the following action will be followed:

(1) Third echelon shops will report items exceeding the maximum maintenance cycle time to their supporting fourth echelon maintenance shop for disposition instructions or action. Documentation of the steps taken to obtain needed parts is extremely important to show that maximum maintenance effort has been exerted.

(2) Fourth echelon maintenance shops will:

(a) Submit Recoverable Item Reports per MCO P4400.82 on controlled items. Include in the remarks paragraph of the Recoverable Item Report all actions taken to obtain required parts, including followup message traffic to the Marine Corps Logistics Base (MCLB), Albany.

(b) Other-than-controlled items will be disposed of per UM 4400-15 or UM 4400-124.

d. Exceptions. The maintenance officer of the intermediate maintenance activity may extend the limits of the maximum maintenance cycle time, subject to approval of the equipment's unit commander, when economically justified and advantageous to mission completion. Documentation for repaired repair parts must support this decision.

**5. OVERFLOW MAINTENANCE.** Overflow maintenance is that maintenance which is within a unit's authorized EOM but beyond its capability because of restrictive and/or unusual circumstances and is consequently performed by another unit, usually a support activity. The following conditions may prevail:

a. Insufficient maintenance resources; for example, shortage of technicians or mechanics, shop space or facilities, maintenance equipment, or inadequate supply support is an exceptional case and is employed only when:

(1) Proper reconciliation procedures are followed.

(2) Follow-up of supply documents is documented.

(3) Requisitioning of not in stock parts from other sources will not provide relief within the maximum maintenance cycle time.

b. Workload surge; for example, requirements to meet pre deployment schedule or post deployment requirements, urgent modifications required on high-density equipment.

c. Cost-effectiveness; for example, instances when it would be more cost effective for the supporting maintenance facility to perform organization maintenance on supported equipment in conjunction with or independent of intermediate maintenance. Such overflow maintenance will be contingent on the availability of maintenance resources at the supporting activity and

agreement between the support activity and the supported organization.

**REFERENCES:**

1. MCO P4790.2\_
2. TM 4700-15/1\_
3. AETM
4. MCO P4855.4
5. MCO 4855.10